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**Changes to legislation:** There are outstanding changes not yet made to Commission Delegated Regulation (EU) 2019/934. Any changes that have already been made to the legislation appear in the content and are referenced with annotations. (See end of Document for details) View outstanding changes

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## ANNEX I

### Appendix 3

#### **Ion exchange resins**

The ion exchange resins which may be used in accordance with line item 6 of Table 1 of this Annex are styrene and divinylbenzene copolymers containing sulphonic acid or ammonium groups. They must comply with the requirements laid down in Regulation (EC) No 1935/2004 and Union and national provisions adopted in implementation thereof. In addition, when tested by the analysis method laid down in the third paragraph of this Appendix, they must not lose more than 1 mg/l of organic matter into any of the solvents listed. They must be regenerated with substances permitted for use in the preparation of foodstuffs.

These resins may be used only under the supervision of an oenologist or technician and in installations approved by the authorities of the Member States on whose territory they are used. The authorities shall lay down the duties and responsibility incumbent on approved oenologists and technicians.

Analysis method for determining the loss of organic matter from ion exchange resins:

#### 1. SCOPE AND AREA OF APPLICATION

The method determines the loss of organic matter from ion exchange resins.

#### 2. DEFINITION

The loss of organic matter from ion exchange resins. The loss of organic matter is determined by the method specified.

#### 3. PRINCIPLE

Extracting solvents are passed through prepared resins and the weight of organic matter extracted is determined gravimetrically.

#### 4. REAGENTS

All reagents shall be of analytical quality.

Extracting solvents.

4.1. Distilled water or deionised water of equivalent purity.

4.2. Ethanol, 15 % v/v. Prepare by mixing 15 parts of absolute ethanol with 85 parts of water (point 4.1).

4.3. Acetic acid, 5 % m/m. Prepare by mixing 5 parts of glacial acetic acid with 95 parts of water (point 4.1).

#### 5. APPARATUS

5.1. Ion exchange chromatography columns.

5.2. Measuring cylinders, capacity 2 l.

5.3. Evaporating dishes capable of withstanding a muffle furnace at 850 °C.

5.4. Drying oven, thermostatically controlled at  $105 \pm 2$  °C.

5.5. Muffle furnace, thermostatically controlled at  $850 \pm 25$  °C.

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- 5.6. Analytical balance, accurate to 0,1 mg.
- 5.7. Evaporator, hot plate or infra-red evaporator.
6. PROCEDURE
- 6.1. Add to each of three separate ion exchange chromatography columns (point 5.1) 50 ml of the ion exchange resin to be tested, washed and treated in accordance with the manufacturer's directions for preparing resins for use with food.
- 6.2. For the anionic resins, pass the three extracting solvents (points 4.1, 4.2 and 4.3) separately through the prepared columns (point 6.1) at a flow rate of 350 to 450 ml/h. Discard the first litre of eluate in each case and collect the next two litres in measuring cylinders (point 5.2). For the cationic resins, pass only solvents referred to in points 4.1 and 4.2 through the columns prepared for this purpose.
- 6.3. Evaporate the three eluates over a hotplate or with an infrared evaporator (point 5.7) in separate evaporating dishes (point 5.3) which have been previously cleaned and weighed ( $m_0$ ). Place the dishes in an oven (point 5.4) and dry to constant weight ( $m_1$ ).
- 6.4. After recording the constant weight (point 6.3), place the evaporating dish in the muffle furnace (point 5.5) and ash to constant weight ( $m_2$ ).
- 6.5. Calculate the organic matter extracted (point 7.1). If the result is greater than 1 mg/l, carry out a blank test on the reagents and recalculate the weight of organic matter extracted.

The blank test shall be carried out by repeating the operations referred to in points 6.3 and 6.4 but using two litres of the extracting solvent, to give weights  $m_3$  and  $m_4$  in points 6.3 and 6.4 respectively.

## 7. EXPRESSION OF THE RESULTS

### 7.1. Formula and calculation of results

The organic matter extracted from ion exchange resins, in mg/l, is given by:

$$500 (m_1 - m_2)$$

where  $m_1$  and  $m_2$  are expressed in grams.

The corrected weight (mg/l) of the organic matter extracted from ion exchange resins is given by:

$$500 (m_1 - m_2 - m_3 + m_4)$$

where  $m_1$ ,  $m_2$ ,  $m_3$  and  $m_4$  are expressed in grams.

- 7.2. The difference in the results between two parallel determinations carried out on the same sample must not exceed 0,2 mg/l.

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### Changes and effects yet to be applied to the whole legislation item and associated provisions

- Signature words omitted by [S.I. 2020/1637 reg. 29\(11\)](#)
- Annex 1 Pt. A Appendix 1 point 1 omitted by [S.I. 2021/632 reg. 10\(5\)\(c\)](#)
- Annex 1 Pt. A Appendix 2 omitted by [S.I. 2021/632 reg. 10\(5\)\(d\)](#)
- Annex 1 Pt. A Appendix 3 words omitted by [S.I. 2021/632 reg. 10\(5\)\(e\)\(i\)](#)
- Annex 1 Pt. A Appendix 4 words omitted by [S.I. 2021/632 reg. 10\(5\)\(f\)\(ii\)](#)
- Annex 1 Pt. A Appendix 3 words substituted by [S.I. 2021/632 reg. 10\(5\)\(e\)\(ii\)](#)
- Annex 1 Pt. A Appendix 4 words substituted by [S.I. 2021/632 reg. 10\(5\)\(f\)\(i\)\(aa\)](#)
- Annex 1 Pt. A Appendix 4 words substituted by [S.I. 2021/632 reg. 10\(5\)\(f\)\(i\)\(bb\)](#)
- Annex 1 Pt. A Appendix 8 point 7 words substituted by [S.I. 2021/632 reg. 10\(5\)\(g\)](#)
- Annex 1 Pt. B Appendix 8s. A point 3 omitted by [S.I. 2021/632 reg. 10\(6\)\(a\)\(ii\)](#)
- Annex 1 Pt. B Appendix 8s. A point 2(c) substituted for Pt. B s. A(2)(c)-(e) by [S.I. 2021/632 reg. 10\(6\)\(a\)\(i\)](#)
- Annex 1 Pt. B Appendix 8s. A point 5 word substituted by [S.I. 2021/632 reg. 10\(6\)\(a\)\(iv\)\(bb\)](#)
- Annex 1 Pt. B Appendix 8s. A point 4 words substituted by [S.I. 2021/632 reg. 10\(6\)\(a\)\(iii\)\(aa\)](#)
- Annex 1 Pt. B Appendix 8s. A point 4 words substituted by [S.I. 2021/632 reg. 10\(6\)\(a\)\(iii\)\(bb\)](#)
- Annex 1 Pt. B Appendix 8s. A point 4 words substituted by [S.I. 2021/632 reg. 10\(6\)\(a\)\(iii\)\(cc\)](#)
- Annex 1 Pt. B Appendix 8s. A point 5 words substituted by [S.I. 2021/632 reg. 10\(6\)\(a\)\(iv\)\(aa\)](#)
- Annex 1 Pt. B Appendix 8s. C point 2 words substituted by [S.I. 2021/632 reg. 10\(6\)\(b\)\(i\)](#)
- Annex 1 Pt. B Appendix 8s. C point 2 words substituted by [S.I. 2021/632 reg. 10\(6\)\(b\)\(ii\)](#)
- Annex 3 s. A point 2(b) omitted by [S.I. 2021/632 reg. 10\(14\)\(b\)](#)
- Annex 3 s. A point 4(c) omitted by [S.I. 2021/632 reg. 10\(14\)\(d\)\(ii\)](#)
- Annex 3 s.B omitted by [S.I. 2021/632 reg. 10\(15\)](#)
- Annex 3 Appendix 1-3 omitted by [S.I. 2021/632 reg. 10\(15\)](#)
- Annex 3 s. A point 2(a) word omitted by [S.I. 2021/632 reg. 10\(14\)\(a\)](#)
- Annex 3 s. A point 4(a) words omitted by [S.I. 2021/632 reg. 10\(14\)\(d\)\(i\)](#)
- Annex 3 s. A point 3 words substituted by [S.I. 2021/632 reg. 10\(14\)\(c\)](#)
- Annex 2 s. C point 2 omitted by [S.I. 2021/632 reg. 10\(12\)\(b\)](#)
- Annex 2 s. A point 4(d) substituted by [S.I. 2021/632 reg. 10\(10\)\(b\)](#)
- Annex 2 s. A point 4 word inserted by [S.I. 2021/632 reg. 10\(10\)\(a\)\(ii\)](#)
- Annex 2 s. B point 2 word substituted by [S.I. 2021/632 reg. 10\(11\)\(a\)\(ii\)](#)
- Annex 2 s. B point 4(a) words omitted by [S.I. 2021/632 reg. 10\(11\)\(b\)](#)
- Annex 2 s. C point 1 words omitted by [S.I. 2021/632 reg. 10\(12\)\(a\)\(i\)](#)
- Annex 2 s. C point 1 words omitted by [S.I. 2021/632 reg. 10\(12\)\(a\)\(ii\)](#)
- Annex 2 s. C point 9(a) words omitted by [S.I. 2021/632 reg. 10\(12\)\(c\)](#)
- Annex 2 s. A point 4 words substituted by [S.I. 2021/632 reg. 10\(10\)\(a\)\(i\)](#)
- Annex 2 s. B point 2 words substituted by [S.I. 2021/632 reg. 10\(11\)\(a\)\(i\)](#)
- Art. 1a inserted by [S.I. 2020/1637 reg. 29\(3\)](#)
- Art. 4(1)(a) words inserted by [S.S.I. 2022/361 reg. 11\(2\)\(b\)](#)
- Art. 4(1)(a) words omitted by [S.S.I. 2022/361 reg. 11\(2\)\(a\)](#)
- Art. 4(1)(a) words omitted by [S.I. 2022/1150 reg. 10\(2\)](#)
- Art. 4(1)(a) words omitted by [S.I. 2022/1215 reg. 7\(2\)](#)
- Art. 4(1)(c) words substituted by [S.I. 2020/1637 reg. 29\(5\)\(a\)\(ii\)\(aa\)](#)

- Art. 4(1)(c) words substituted by S.I. 2020/1637 reg. 29(5)(a)(ii)(bb)
- Art. 14(6) inserted by S.I. 2020/1637 reg. 29(10)(f)